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HARPER'S MAGAZINE

VOL. CXXVII SEPTEMBER, 1913 No. DCCLX

By Caravan through the Libyan Desert

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"*TSHUG? Tshug?*" said Abou Salem, our Bedouin leader, moving his swinging arms up and down piston fashion to imitate the stride of a camel, then swept the sky from east to west in the course of the sun to ask if we wished to travel from sunrise to sunset without halting the caravan. A dozen camels were drinking against a five days' thirsty march to Dahkla, from the tepid, sluggish stream that issued from the flowing well, Ain Mansura, near the date orchards of Nadura in the oasis of Kharga. Tanks of iron, water-bags of canvas, and gazelle-skins were being filled, and packs were being adjusted to the saddles of the bubbling, roaring, and snarling camels, while our Bedouin and Sudanese drivers chattered in an explosive dialect, unwritten, unwritable, and unknown to civilized man, probably of the hazards and hardships to be encountered in the round of the western oases of Egypt upon which we were about to start. Much of this was conjecture on our part, as the conversation might have been carried on in the purest Arabic without enlightenment to us. Friends and officials from San Francisco to Khartoum had been insistent in their advice that a caravan journey without a dragoman or interpreter would be uncomfortable or impossible, but some experience with aboriginals of North America had furnished basis for the presumption that the principal daily needs of intercourse on a rough march might be met with a few gestures and fewer words.

Our purpose was to make a sketchy analysis of the physical conditions which conjoin to make the Libyan Desert one of the most intensely arid regions of the globe, and to note the manner in which living things, plants and animals, had adjusted themselves to the climate. The improvised fiction usually delivered by interpreters did not promise any serious contribution on this subject. Furthermore, the advantage of seeing the Bedouin and his ways in the desert unhampered by a dragoman, whose presence conduces to annoying servility and well-meaning misrepresentation, far outweighed any consideration of comfort or safety.

A gesture of assent and an emphatic "*aiwa,*" in reply to the sheik's inquiry, expended one-twentieth of our available Arabic, and started the caravan on a journey of nearly five hundred miles early in February of the present year. Every effort was made to avoid interference with the detail of daily action, and we committed ourselves as self-effacing passengers to the cara-

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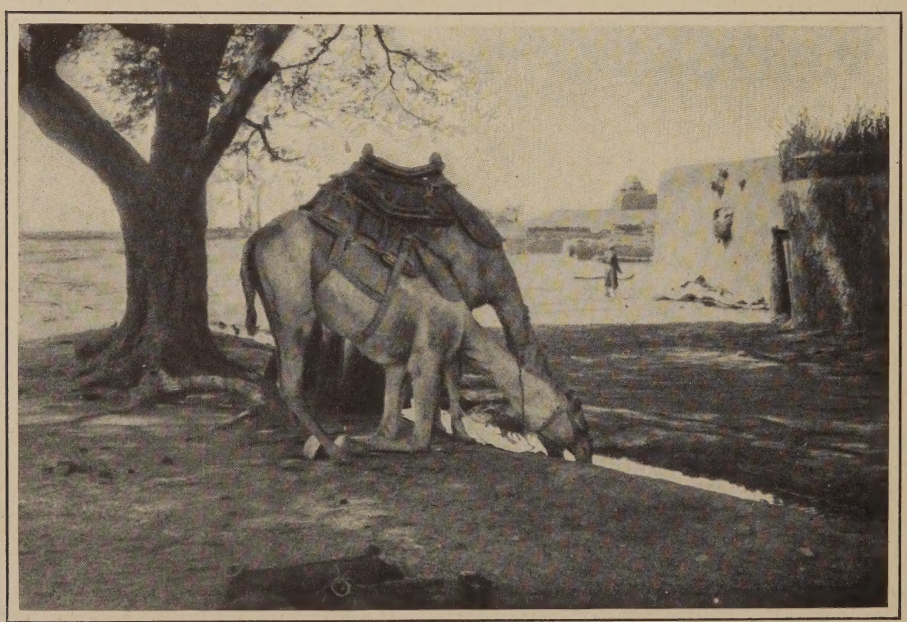
van, after a plain agreement as to the route to be followed. We declined to be annoyed by mention of bakshish on the part of our cameleers or of strangers, such requests and other importunities being steadfastly not understood on our part. Insistence on promptness in the morning start and in the observance of certain hygienic precautions in taking a supply of water made the only disturbances in the daily routine. Our reward was rich and immediate. While we discussed the things about us, making records with unobtrusive note-books and deceptive-angle camera, our own appearance, actions, and mishaps were observed and commented upon, respectfully, but doubtless in the minutest detail, which often resulted in our wants being anticipated.

We had left the Nile one cool morning early in the month in the state compartment of the train which runs twice weekly from Owasla-el-Wahat, on the main line, over the narrow-gage road which climbs over the Libyan plateau west of Luxor and old Thebes, by ancient belief the abode of the dead. But one green thing was seen before reaching the oasis of Kharga, and that was a willow-tree of a man's height, surrounded by a low, dried mud wall at a lone station midway of the journey. All of the water used here came in tank-cars from the river sixty miles away, and the total effort spent upon this slender shrub probably represented the value of several choice orchids. The small cars were double-roofed, with overhanging eaves coming down partly in front of the windows, in which the glass was of the tint of spectacles sold to tourists on four continents. The third-class wagons were also provided with double roof, but the sides were cut away to within a yard of the floor, thus giving the native passengers ventilation and an outlet for chewed sugar-cane, which was seen to issue in a shower from the sides of the train.

Near the end of the day we arrived at the Merkez of the Western Egypt Development Company in Kharga, where final arrangements for the caravan were perfected. The baggage-camels provided were well matched for endurance and carrying capacity, and the riding-animals, though not of racing stock, were capable of a steady three miles per hour around the clock. Abou Salem, the



DRINKING AGAINST A FIVE DAYS' THIRSTY MARCH

MOUNTING OUR STEEDS

sheik in charge, was a wiry, alert, hawk-faced Bedouin, with a wide range of desert experience, and had in his younger days tracked up and down the Darb-el-Arbain, or road of forty days, which ran past our starting-place up into Kordofan and down a thousand miles to Assiût on the Nile, bringing ivory and feathers to Lower Egypt. Under him were Nimr (the tiger), factotum and cook, and seven camel-boys, whose total disreputable belongings and clothing could have been easily carried in a single handkerchief. The cameleers supposedly furnished their own commissary, but during the entire trip we saw no supplies among them except the sheep which were bought for them at three of the principal stops, and of these everything except a few splashes of blood and the skins appeared to be consumed.

The daily programme began at five-thirty in the morning, with a laborious awakening of the semi-torpid Arabs, who huddled in the lee of the baggage, with their scanty clothing mostly bound round their heads. Bits of wood and dried camel dung might be collected during the day's march to furnish a tiny fire in the evening, over which some cooking would be done, but the luxury of a fire for warmth in the morning, the grateful solace of the American desert, was not available for any of us. The clumsy packing on the expostulating camels would be done in a ragged and haphazard fashion in the chill air, and a hasty breakfast would be eaten, standing, from the boxes. Plates and cups were taken from our hands and stowed in the cook's kit, which a minute later rose precariously aloft on the last load. Then we struck out afoot with ten minutes' start, as the sun came over the horizon, mounting an hour or two later as our led animals came up. Late in the day we dismounted to walk the last four or five miles into camp. The unhalting caravan moved at a fairly uniform speed of two and a half miles an hour during the eleven-hour day. All of the scientific work outside of the oases was done in the time allowed by the superior speed of the riding-animals. A long lead would be secured by an hour or two of brisk pacing, then instruments would be set up for photography, sketching, or range-finding; but the remorseless movement of the caravan soon brought them abreast, and if we lingered afterward, the stern chase was generally found to be a long one.

The camel is the one characteristically desert animal that has been domesticated,

though it is probable that not much change in its habits has been made in the process. The nature and behavior of these animals were as strange to us as at our boyhood's first circus, and many vivid descriptions of their soul-racking gait had become real to us, as we had made a trial mount at Port Sudan, on the Red Sea, a month before. The start on the long journey was made after a total experience of less than fifteen miles of riding, but whatever misgivings we may have had were dispelled when it became apparent that the horseman who has gained his experience in the roomy seat and with the long stirrup-leather of the Texas or cowboy saddle is in the way of finding himself quickly at home in the *mahklufa,* or camel-saddle, of Egypt. Cover a sawbuck with carpet, fasten a rocking-chair seat to the top, place a sheepskin on this, through which project the short knobs or pommels fore and aft, and some notion of the camel-saddle will be gained.

Climbing aboard a loaded baggage-camel as practised by the cameleers was much like scrambling into a moving wagon, but mounting a kneeling camel might develop the unexpected, and it was noted that even our veteran sheik frequently called a boy to steady his animal while he got in place. The camel is kneeling, with the calloused projection of its breast-bone resting heavily on the ground, and you approach the padded seat, which lies at the level of your belt, and looks as accessible as an arm-chair in a quiet room. To get in place you must throw the right knee over the forward pommel, then grab both pommels as anchorage against the coming upheaval. This may follow with such lightning-like rapidity that you are incontinently dumped to one side, while even the most athletic sometimes go up clinging to the side of the saddle and scramble into the seat later. Proper assistance to the dignified rider who does not care for such display consists in holding down the head of the animal, while a loop of the riding-line around the bent fore-leg prevents the camel from rising until the rider is up. When both restraints are removed, the animal instantly gets into position for the rise, tilting the saddle backward, then comes up on its hind-legs, finishing with a swift jerk in front and a shaking toss, the separate movements being disconcerting to the novice. Once aloft, the rider may sit in a variety of positions, which eases the long day and is far less fatiguing than a similar length of time on horseback. The height is such that the head is held nine or ten feet above the ground, producing much the same feeling of elation as that remembered from riding the old high-wheel bicycle, and at the same time giving rise to speculations as to the result of a header. My own desire for knowledge was soon to be satisfied. A fortnight after the start, the caravan emerged from the sand-dunes north of Dahkla, through which we had been plodding for four days, and as it was important to reach water before nightfall, the three riders scouted ahead to find a sealed well reputed to lie near the margin of the sand. Crossing a small ridge of limestone about noon-time, the pacing camel stumbled on a stone no larger than a golf-ball and turned a somersault which catapulted me to a distance of several yards, where I landed unhurt. However, before I could run back the animal was up and away, and I was compelled to trail it to Bir Dikkar, carrying instruments and other articles dropped from the torn saddle-bags.

The main requirement of a model of the country traversed would be a number of huge, irregular, knobby slabs of coarse, yellowish sandstone a hundred miles or so across, and containing beds and pockets of clay and marl. These should be laid down with the northern margins at the level of the Mediterranean, with the southern edges tilted up to expose a scarp or edge several hundred feet in thickness. Other slabs should be put down to the southward, with the southern edges tilted to a height of fifteen hundred or two thousand feet. Now imagine this series of slopes exposed to a subtropical sun, to the *khamsin,* or fifty-day wind of March and April, and to the northerly winds of winter, with uncertain rain-storms occurring in any one locality twice a year or perhaps twice in a century, and you have a working idea of the Libyan Desert with its oases.

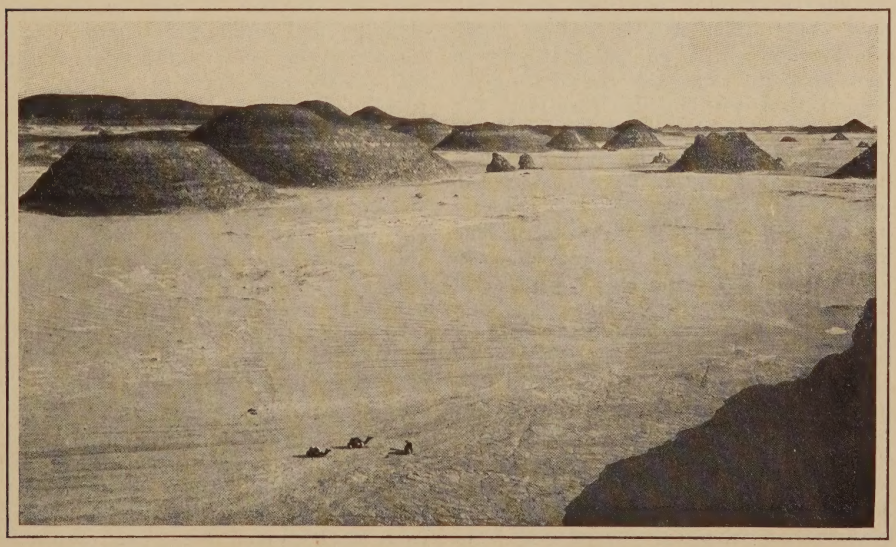
Primitive man in his earlier wanderings, driven out into the stress of the

dry places by what desire or necessity we know not, found seeps and flowing springs immediately under the great scarps or cliffs, which were the center of all of the wild life of the region. In addition to the flow coming up through distinct openings and crevices, the water in other places diffused upward through the loose crust, giving sufficient moisture for a characteristic vegetation, but not in such volume as to bring the liquid to the surface. This may not be accomplished by the most expert engineering in most places of this kind. The sand, loosened from the surface by heat and cold and the action of the wind, was driven as a cutting blast which carved deeply into the exposed cliffs, planing and polishing the surfaces of exposed limestone into scroll-like mirrors of *karafesh*, leaving knobs and mounds of clay and marl here and there in the depressions and on the higher slopes.

If a section of sandstone moistened by water was encountered, this was held together by the moisture, and was not cut down, remaining as a hill. In other cases the water flowing from a spring caught and held moving sand, which was in time cemented and built up into little hills as much as a hundred feet in height, and it is on these elevations that the most interesting historical records may be found. Man on the Libyan Desert has always built his dwellings of mud and stone on the moist hills, and some of these yield at a glance the sequence of paleolithic man, Berber, Egyptian, Roman, Persian, and modern pagan, Copt, and Moslem, in records from the rudest pottery of baked mud to the products of the finer arts of the present.

The golden sands of the Egyptian desert cover great areas on the long slopes, in the shape of ridges which run fifteen degrees west of north and east of south for a distance as great as three hundred miles in some places. Under a westerly wind the crests of the dunes take on a knife-edge sharpness. The northerly winds of winter, however, blowing the length of the dunes, break down the sharp crests and build crescents which give the summits of the ridges a toothed effect like a saw. In addition minor ridges may connect two parallel dunes, but it is possible to ride for many miles along a clean-swept lane of *sogag* a quarter to a half mile wide, between the dunes which rise on either hand to a height of a hundred feet or more.

The first section of the journey lay along the sandstone escarpment from the village of Nadura in Kharga to the little villages of Tenida, Smint, Mut, Rashida, and Dahkla, in the oasis of Dahkla,



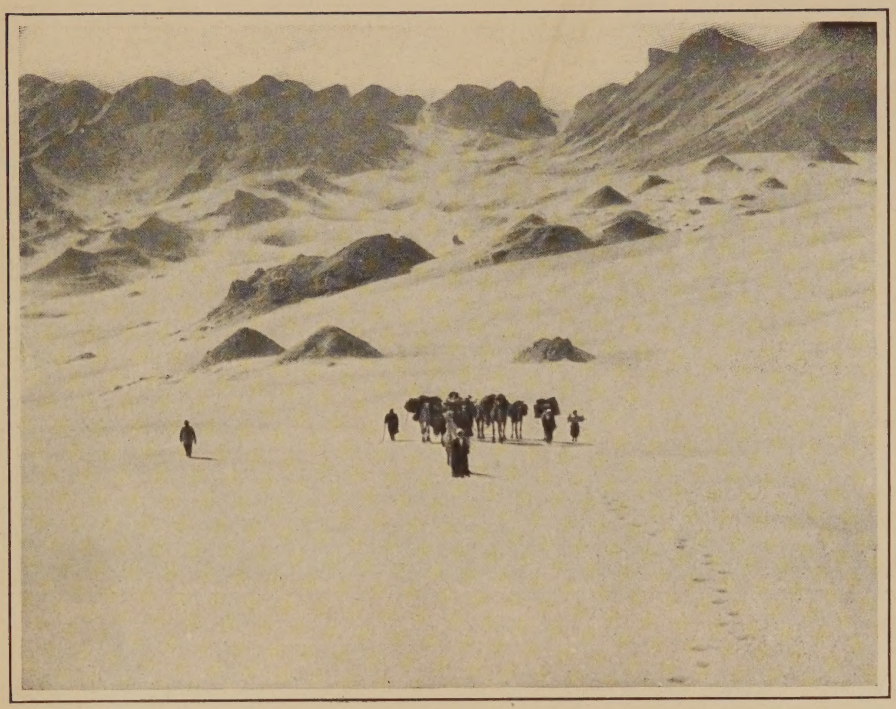
ROUNDED HILLS OF THE LIBYAN DESERT WORN BY THE WIND

about one hundred miles to the westward. Both oases are in the same general depression not many feet above sea-level, and it was on the track between them that the first opportunity for close examination of the desert was afforded. First of all, the reader is asked to join in relegating to the scrap-heap travelers' tales of dry places utterly devoid of life. The intricate pattern of living things which characterizes the moister regions becomes simplified in the desert and many threads disappear, but the areas of land surface not used or occupied by plants or animals are limited in extent and remote, indeed, from sources of water.

Regions in southwestern America that convey the impression of extreme aridity are, in fact, rich in life, and that part of Arizona contiguous to the domain of the Desert Laboratory bears as many species of plants per square mile as the densest tropical jungle: the number of individuals representing each form is, of course, very small. The same is probably true of the eastern desert of Egypt between the Nile and the Red Sea. Conditions conspire against the traveler who looks casually for evidence of living things in the Libyan Desert. The caravan track consists of a network of trails which spread out in a band from a few yards to a mile in width. The camel plodding along these trails ravages everything but rock and sand, and the traveler will be carried along the bared strip. If he should attempt to lean upon information gathered from the Bedouins, he will find that they know but little of the country on either side of the caravan track, and remember only those plants affording camel food. The widest interval between clumps of vegetation on our journey was crossed on the first and second days, when a distance of forty miles of gravel, sand, and broken rock was traversed, in which no vestige of any kind of a plant dead or alive was found between the bunches of grass near Nadura, and the crop of dead stems of an annual plant which had grown up after some vagrant rain-storm two or three years before in a depression near some sandstone knobs. The branches crumbled in the dry air, but a profusion of shiny, lens-shaped seeds were falling to the ground; and these, capable of withstanding desiccation for many years, would spring quickly into life with the first supply of moisture.

We were not allowed to think that the bare area was circular in outline, because the scarp rose a short distance to the northward, and the sand-dunes not far away promised vegetation at their bases. In the middle of this stretch a rodent-like mouse crept into the circle of the camp-light in search of food, and probably scores of its kind found sustenance near the track. Lizards were seen near the carcasses of camels, and these also must have some general distribution in the region or they could not take advantage so quickly of this and other windfalls. Gazelles ranged several days' journey from water, and might be seen fifty miles away from any available supply. Fragments of ostrich egg-shells with rounded and smooth edges were found on the sand-dunes south and east of Farafra, far to the northward of the present range of the species, and in places where they have not been known to exist for a long time. Foxes and jack-rabbits also ranged widely in the desert, and no day passed that opportunities were not afforded for seeing the adaptations of form and habit displayed by plants and animals which occupy these driest of all dry places. Plants have steadily developed structures more suitable for existence in arid regions ever since the first simple forms found a footing above the reach of the tides, so that one has the consciousness of seeing this particular evolutionary tendency at its very highest expression in the indurated species of the desert.

The adaptations made by man to conditions of aridity are none the less interesting, and when one attempts to visualize the way in which these deserts have been used in the past, the principal points in the current discussions as to possible changes of climate in this and other parts of the world are brought forcibly to mind. The oases visited did not in our brief examination give evidence of greater fertility in the past, although skilful engineering may have made the water-supply of greater efficiency. The water from the wells comes from sea-level and lower, and probably has no direct connection with the rain-



OUR CARAVAN CLIMBING THE SLOPES OF A SAND-FILLED RAVINE

fall of any part of the country within a thousand miles. Fluctuations of climate which would double the present precipitation would have but little temporary effect and leave no lasting signs, and it is doubtful whether tenfold the amount of rain would result in appreciably greater fertility, since the present amount is very slight. Sections of caravan tracks leading toward the westward and interior of Africa, now unused, suggest changes in trade routes or extinguished oases of which there are indeed traditions. Legends of villages buried in the sand, of unknown swamps and wadies, are rife, and the reputed loss of the army of King Cambyses in the desert sands must have had some fatality for its foundation. Whatever may have been the climatic conditions, the weapons and mementoes to be picked up show that paleolithic man plodded along the wearisome trails from one watering-place to another, and that later people who carried water and food in clay vessels followed some of the same routes, as evinced by the thickly strewn fragments of pottery illustrative of the art of several thousands of years. Their presence midway of the long-dry tangents indicates accidents to water stores and consequent suffering. The camel skeletons and oblong mounds which dot the track at frequent intervals suggest that while some riders may have walked to safety, not all who leave one oasis may reach the cooling shade of the next one.

A man afoot in the American deserts uses from twelve to twenty pints of water daily; and a horse, one of the most unadaptive of all animals taken out into the dry places, consumes ten times as much. In such places the water-bottle and tank is the most carefully looked-after part of the traveler's outfit, while but little attention is paid to the sun or to temperatures. Much less water appears to be needed in the Libyan Desert, while here and all through the hot countries of the East extraordinary precautions are taken to shield the head and neck from the sun and wind. One may walk for hours in the hottest part of

UNSEALING A WELL, BIR DIKKAR

America without special regard to the direct effects of the sun, and a member of the staff of the Desert Laboratory spends as much as a month in the field with no head covering. Whether real differences are to be found between the physiological effects of light in Eastern and in American deserts is not established. It is apparent, however, that the yellowish, glittering sand of the Egyptian desert and the effect of the almost continuous winds result in marked "sunburning" effects.

Sand as a feature of desert landscapes is not so prominent as ordinarily supposed. Dunes of size are to be found in but few places in America away from the sea-shore, but in northern Africa more extensive areas are occupied by huge ridges. One may travel for days without seeing either a mound or the unbroken stretches of sand which figure so largely in literature. Despite these facts, there is enough of fine particles of dust and broken rock present everywhere to become unpleasantly noticeable in a wind. One soon becomes accustomed to grit in the pockets, made aware of its presence by the roughened pages of the note-book, and may even come to enjoy the titillation of having it sift down inside collar and belt, but when it finds a resting-place in footgear it becomes really obtrusive. The least motion of the air disturbs the finer dust on the surface of the ground, and with increasing force of the wind larger particles are lifted and moved along, pelting and abrading everything in their path. The downward action of rain and streams carves mountains and hills into ridges and gullies, which afford shelters from the direct action of storms in moister regions. The wearing action of the horizontally moving sand-blast results in rounded contours much like half an egg, behind which there is no real shelter. When looking for a camping-place at the close of the day, Abou Salem would manœuver to leeward of a small hill, seeking the spot in which the least sand was falling, for no place would be entirely free from it if there was any wind motion. When he came to a quieter place, which might be directly against the base of a cliff or out some distance from it, a few moments' pause would be made, and if the occasional eddy which reached the place did not carry too much grit, the baggage would be arranged for

the night. One might begin dinner or unfold a camera in fancied security, when a disconcerting blast would deluge everything with a shower of sand which penetrated into the mechanism of shutters and plate-holders of cameras as well as into the recesses of "waterproof" baggage. The experience of only a day or two was needed to learn that the least discomfort would be met by facing the wind with a fold of cloth before the face, an expedient readily used when riding, but making difficulties for the man afoot.

Our own experience left nothing to be desired in the way of opportunities for seeing the action of a Saharan sandstorm. A leisurely journey from Mut in the oasis of Dahkla took us northward, one day in February, to Qasr Dahkl, which lies under a scarp rising fifteen hundred feet above it. A breeze rose steadily during the day and night, and when the morning call to prayers sounded from a near-by house-top in the chill dawn, the roar of the wind passing high overhead was distinct and ominous. A steep ravine piled deep with sand gave passage up the slope, and when we had toiled up this, reaching the rim at noon, the full violence of a gale of thirty-five or forty miles an hour came directly in our faces. Pebbles as large as peas were being moved along near the ground, while finer particles were carried so high as to strike a camel-rider in the face. A halt was soon necessary. A second essay was made; but the track was almost obliterated, and it was prudent to keep the animals and men in close order. Presently the characteristic smell of wet sand came to the nostrils, followed by scattering rain-drops, which added to the cooling effect of the wind. It was necessary to make camp, and this was done directly, in the open, with no shelter except the lee of the baggage and two sleeping-bags. The wind abated somewhat by morning, but our muslin-clad cameleers must have found the temperature of several degrees below freezing-point quite uncomfortable, since we suffered, though clothed as if for an arctic climate. The breeze continued during the day, but with diminished force, much to our good fortune, as we entered high dunes through which we were to travel for three days. The sand was disposed in ridges as much as a hundred feet in height, with stretches of *sogag* between.

Once you had entered one of these lanes, you followed it for fifty miles before a convenient crossing to another

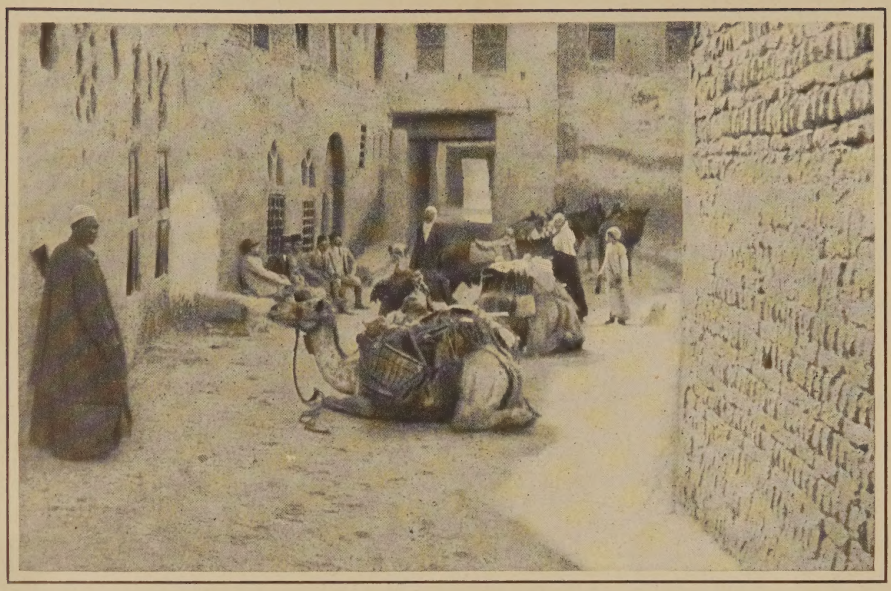
THE COMMON WELL AT FARAFRA

passage would be found. It was here that the qualities of our desert-wise Bedouin leader were seen at their best. Trotting far ahead, he would dismount, and soon his figure would be seen on the sky-line of a ridge from whence sand signals and semaphoric movements of his arms or fluttering display of robes would send information as to the route for the moving caravan. A handful of sand thrown or allowed to dribble from the upraised hand would show a yellowish, hazy flash in the sunlight that could be seen a mile. This signal made at the head of a caravan called in flanking scouts; seen ahead, it directed us toward it, but halted the caravan if the scout ran toward or across the track after making it. The flashing sand is eloquent of danger or needed assistance in hostile times and places, and its interpretation varies with the circumstances under which it is given. A halt could also be signaled by waving a garment of any kind at arm's-length over the head, and when the correct route was being sought, the finder would stand with outspread arms distending his robes to a pillar of white toward which the caravan moved.

Equally striking were the practices attendant upon chance meetings in the desert. Horsemen seemed to be always viewed with suspicion when met away from the oases. In such a meeting, as we approached the oasis of Baharia, our sheik suddenly drew his double-barreled gun from its sheath on the rear of his saddle and placed it in readiness in front of him, until identities were established on both sides. Our caravan far to the rear carried an armament more showy than formidable, including three muzzle-loading guns and a rusty cavalry officer's saber devoid of hilt and handle. None of the parties concerned suspected that within reach of our finger-tips in the saddle-bags reposed two modern revolvers of effective caliber and a range much longer than that of the black-powder guns about us, and no occasion arose for disclosing their presence until we, unexpectedly to our escort, joined in the powder play at the first sight of the Nile, near Minia, at the close of the journey.

The people of the more isolated oases of western Egypt form close communities, in which the Berber stock is still dominant, dwelling in pueblos and living by an agriculture of the most intensive kind. The mud-walled houses are usually built around or near a well or spring on a small hill or ridge. These buildings may rise to a height of two or three stories, and are grouped together in a huge warren penetrated by tortuous passages which may lead underground, or bring the intruder into an open court into which look a dozen port-holes. Inclosing walls are carried up around the entire village when trouble threatens, but such defenses are allowed to crumble in times of peace. The chief supply of water will generally be taken from a well outside the village. Thus Farafra, one of the most slowly changing of the oases, comprises a single solid cluster of mud houses, a separate structure serving as a monastery for a group of Senoussi converts, a date orchard divided into several private holdings, with minute gardens, and a small wheat-field, the total area under cultivation being about half a square mile. The population numbers less than four hundred, and the ratio of one inhabitant per acre may be taken as a safe basis for estimating the number of inhabitants in such places. The small supply of rough forage supports a definitely limited number of sheep, turkeys, and donkeys. Surplus men or animals must of necessity be led to the shambles, or to the distant Nile for sustenance.

Upon our arrival at this oasis in midforenoon, the ceremonial call was made on the *omdeh,* who designated the open stretch of sand midway between the village and the palms as a camping-place. The entire male population, assembled in a squatting semicircle, viewed our operations at respectful distance. A dignified sheik conducted us to the "Ain Roman" in the edge of the palms for a bath, and the bath-house proved to be a low mud inclosure over the sluggish outlet of the well which made a pool about forty feet in diameter. Other sections of the circumference served as a place for washing clothes, for morning and evening ablution of hands and feet, or for filling water-jars. Laundry products and the mud stirred by water-



THE CEREMONIAL CALL ON THE OMDEH

carriers and by the bathers made an unattractive combination, and when our half-clad cameleers heightened the effect by jumping in to fill our water-tanks, we were constrained to rectify their contents by ample proportions of permanganate; and this wine-colored mixture of most abominable flavor was our sole supply during the four days' march to Baharia, the next oasis.

The chief town of Baharia consists of two communities which join as one town, reminiscent of Minneapolis and St. Paul. The water-supply includes some splendid flowing wells, which have been developed to their utmost capacity since the earliest known times. Some of them have been buried in the sand along with sections of prosperous-looking date orchards, while various efforts have been made to augment the water-supply by meandering tunnels driven through the rock. These communicate with the surface at short intervals by shafts, the walls of which in later times have been recessed for tombs. The camp at this place was pitched between the village and the vast necropolis which stretches away to the westward and southward, covering an area many times larger than that of the village itself. The population of Bawitti-Baharia numbers less than two thousand, while the tombs hold the remains of over a hundred times as many—the dead of four or five thousand years. The demand for relics has led the inhabitants to excavate among the older tombs, and remains are thrown carelessly about on the surface of the ground. Skulls, bones, and fragments of mummies were seen in great abundance along the tracks or in the small gardens fringing the village. Coins, carnelian beads, and scarabs were being retrieved from ancient graves on one side of the camp, while on the other a funeral moved out from the village at sunset, the ululating hired mourners sounding a conventional cry of grief, perhaps as old in its use as anything with which we came in contact.

The antipathies of the town-dweller and the Bedouin were perceptible to one with only a casual knowledge of local conditions, and whenever one of the camel-boys was called upon to carry apparatus through the narrow lanes in the orchards, or through the involved passageways, his manner was timid and fearful in the extreme, and not an unnecessary moment was willingly spent in

such narrow and hostile quarters. At sunset a caftaned guard sent by the *omdeh* reported to our sheik for duty, and spent the night with his rifle wrapped in his robes among the cameleers. His presence warned away prowlers from the village, and also served as a check on any pilfering propensities on the part of our escort. The grave and respectful salute which he rendered on our morning start was a refreshing relief to the servile hand-kissing which must be endured in so many of these remote localities.

A third rim of sand and limestone was climbed out of the basin of Baharia as the caravan started for the Nile, five days distant. The wind-worn hills encountered on the high plateau at this place, in addition to the rounded forms, included many in which the sides sloped in straight lines meeting at the sharp summit, with an aspect strikingly similar to that of the great pyramids. Ancient tracks lead from near here to the Fayoum, and to the vicinity of the great monuments of Gizeh, and the region was fairly accessible by any method of travel. These and other pointed hills, offering splendid models of form and size, must have been known to the designers and builders of these greatest of all human monuments. Position and the courses of the passageways and other features of the pyramids may well be left for the astronomer to interpret, but it is difficult to avoid the suggestion that the similarity of form between them and the hills is more than accidental.

The caravan track leading most directly to the Nile was marked by rough blocks of basaltic rock, and it kept an eastward course across a seemingly endless succession of wide, shallow depressions shimmering with formless mirages and perpetually scoured by the north winds. Areas of loose ground dotted with grave-like cavities were seen, from which salt had been taken and carried to distant markets. A series of dunes a few miles in width was crossed, which is known to extend in a north-and-south direction for nearly three hundred miles, and in another place a narrowed band had cut across the track, interposing ridges of moving sand which were carefully avoided by long detours. Miles apart masses of vegetation would bulk large and distorted, but when ridden down they dwindled to small clumps of an indurated succulent which had started with the moisture of a vagrant rain-storm a few years before, and survived inactive and leathery. Among these and at short intervals were the burrows of rodents, the trails of lizards, and the footprints of gazelles, which derive their sole supply of moisture from the scanty proportion in their desiccated food. These, with the traveling and migrating birds, extend the thin web of life across the driest area the world's surface affords.

The Voice

BY ALBERT BIGELOW PAINE

THERE is only one law and only one God
For all things under the sun—
The sea, and the sand, and the wind-blown soul,
And the God and the law are one.

And whatever the law and the God be named
By beings like you and me,
They speak supreme in that cosmic voice
Which men call *Harmony.*